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# Performance of Saudi Universities in Global Rankings and appropriate strategies for its improvement

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# **Performance of Saudi Universities in Global Rankings and appropriate strategies for its improvement**

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## **Abstract**

Saudi universities are utilizing various university ranking systems to publicize their academic and research performance to the students and their parents. This study aimed to describe the ranking position of top ten Saudi universities across Quacquarelli Symonds (QS) and Times Higher Education (THE) world university rankings based on the ranking results established in 2019. Based on results, the leading position observed among such universities were King Fahd University of Petroleum & Minerals (KFUPM) in QS and King Abdulaziz University (KAU) in THE. This study is not only provided an analysis of rankings of top ten Saudi universities; but also highlighted the key areas such as reputation, teaching quality, research/citations, internationalization, and industry income where, Saudi universities need to concentrate in order to succeed in these rankings systems. Further, this study also suggested appropriate strategies that would aid Saudi universities to enhance their performance to improve their ranking position.

**Keywords:** Higher Education, QS World University Ranking, THE World University Ranking, Saudi Arabia, Universities

## **Introduction**

Higher education includes teaching, research, challenging applied work and the social service activities of universities (Pucciarelli & Kaplan, 2016). About 165 million students joined in academic studies in 2009, a five-fold increase since the 1970s. There is a growing trend in cross border higher education, characterized by the movement of people, programmes and providers across national borders. Concomitantly, there is also an increase in the number of higher education institutions (HEIs), which currently a number of 22,000 according to the Webometrics ranking of world universities (2014) (Bergseth, Petocz, & Dahlgren, 2014). Such global expansion of access to higher education has augmented the demand for detailed information regarding academic quality offered at various HEIs. This led to the development of university ranking systems in various countries across the globe (Dill & Soo, 2005). Currently, there are several university ranking systems exists which includes Academic Ranking of World Universities (ARWU), by U.S. News and World Report Global Universities Ranking, Quacquarelli Symonds (QS) Rankings, Times Higher Education (THE) World University Rankings, Center for World University Rankings, Webometrics (Ranking of World Universities), etc., Over 60 countries have introduced national rankings, especially in emerging economies (Hazelkorn, 2012). Apart from national rankings, there are also a number of regional, specialist and professional rankings throughout the world. Each global ranking system tends to include a set of related elements. Initially, the data is collected, either from existing sources or through original surveys. This is followed by the type and quantity of variables selected from the information gathered. Next, the indicators are standardized and weighted from the selected variables. Lastly, calculations are done to make comparisons so that the institutions are

organized into “ranked order” (Institute for Higher Education Policy, 2007). The university rankings vary extensively on the basis of their methodology of analyzing the data on knowledge production, particularly, on the number of research publications and citations; and on surveys of institutional image and reputation as provided by academic peers or consumers of educational services, such as students, parents, and employers (Ordorika & Lloyd, 2013).

Undergraduate domestic students and their parents were the initial target audience for university rankings. Postgraduate students keen on pursuing a qualification abroad, have also become a common target audience and user. These audiences are used by many stakeholders, such as governments, policy-makers, employers, industrial partners, sponsors, philanthropists, private investors, academic partners, academic organizations, the media, and public opinion (Hazelkorn, 2013). Further, HEIs need such university ranking systems to improve their research performance through the participation in international research projects and enticing doctoral researches and students. As HEIs begin to use global rankings as a promotion tool to showcase their education, research or business excellence, students tend to visit the ranking websites in order to choose appropriate universities (Aguillo, Bar-Ilan, Levene, & Ortega, 2010).

Similarly, Saudi Universities are also beginning to use such global rankings. At present, there are 34 universities (25 public and 9 private) spread across the various regions of the Kingdom of Saudi Arabia (KSA). Recently, Saudi Arabia launched Vision 2030, which aims to see no less than five Saudi universities make it to the league of the very top universities in international rankings (Alshuwaikhat, Adenle, & Saghir, 2016). To realize this vision, it is important to understand the metrics by which Saudi universities are judged worldwide and identify the strategic areas for development to improve the quality and measures of excellence for Saudi education. Although several studies have been conducted on global ranking systems

(Belanger & Davidson, 2010; Halai, 2013; Hendel & Stolz, 2008), no studies have been conducted to explore the ranking of top Saudi universities in various global university ranking systems. Therefore, this study was conducted with three-fold objectives to viz. (i) critically appraise the criteria of both QS and THE ranking systems; (ii) describe the ranking position of top ten Saudi universities based on 2019 results of two well-known global university ranking system namely QS rankings and THE World university rankings and (iii) suggest suitable and appropriate strategies for Saudi universities to improve their ranking position with regard to six ranking indicators.

## **Methodology**

### **Study Design**

A descriptive study design was adopted to present the methodology adopted by both QS and THE World university rankings providers to rank the universities across the globe and to compare the performance of top ten Saudi universities in these two world rankings system based on the 2019 ranking results.

### **Methodologies of QS and THE ranking systems**

**QS World university rankings.** In 2004, QS World university rankings were first established to guide prospective students with the information about comparisons of the foremost universities around the world. It is observed that QS has ranked 1000 universities at world level in the year 2019. Out of which, the top 500 are given with individual ranking positions and the rest are ranked in groups of 10 up to 600 (e.g. ten universities that are having same score are placed in one group e.g. 501-510; likewise, 10 classifications are made between 501 to 600

ranking positions). Those universities which are falling beyond 600<sup>th</sup> ranking positions are placed in groups of 50 up to 800 (i.e. universities are placed in four groups as 601-650, 651-700, 701-750 and 751-800). Likewise, those universities falling beyond 800<sup>th</sup> position are placed under one class interval (i.e. 801-1000) (QS World University Rankings, 2019). It is the only international ranking to have been accorded the International Ranking Expert Group (IREG) approval (IREG Ranking Audit, 2016). Universities are evaluated based on six rankings indicators and each indicator carries a different weighting when calculating the overall scores. Four of the indicators are based on ‘hard’ data, and the remaining two are based on major global surveys, i.e., one, of academics, and another, of employers. The indicators and weights used by QS world university rankings are described in Table 1 (QS World University Rankings, 2018). The results are published in an interactive ranking table which can be sorted by country/region and by each of the six indicators. Apart from World university rankings, QS also cover ranking by subject, region, top 50 under 50, and best student cities (QS World University Rankings, 2019).

**Table 1**

*Indicators and weights used by QS World University Rankings*

S. No.	Indicators	Weights in percent
1.	Academic reputation	40
2.	Employer reputation	10
3.	Faculty-student ratio	20
4.	Citations per faculty	20
5.	International faculty ratio	5
6.	International student ratio	5
	Total	100

**Times Higher Education (THE) World university rankings.** THE published its world university rankings in collaboration with QS as THE-QS World University Rankings from 2004 to 2009, and later, they started to collaborate with Thomson Reuters from 2010 for a new ranking system as THE. Now, this ranking system comprises the world's overall, subject, and reputation rankings, alongside three regional league tables, Asia, Latin America, and BRICS & Emerging Economies, which are generated by using a consistent methodology (Altbach, 2010; Samarasekera & Amrhein, 2010; Zirulnick, 2010). The THE ranking system uses 13 carefully calibrated performance indicators to provide the most comprehensive and balanced comparisons, trusted by students, academics, university leaders, industry and governments. The performance indicators are grouped into five areas with their respective weights: teaching, research, citations, international outlook, and industry income. The indicators and weights used by THE World University Rankings 2019 are described in Table 2 (THE World university rankings, 2018).

Moreover, THE has ranked more than 1200 universities at world level in 2019. Out of which, the top 200 universities are given with individual ranking positions and the rest are ranked in six groups of 50 universities in each up to 500 e.g. 201-250. Those universities observed after 500<sup>th</sup> ranking positions are ranked in a group of 100 i.e. 501 to 600 and beyond 600<sup>th</sup> are placed in two groups of 200 in each up to 1000<sup>th</sup> position (i.e. 601-800 and 801-1000). Likewise, those universities falling beyond 1000<sup>th</sup> position are placed under one class interval (i.e. 1001+) (THE World University Rankings, 2019).

**Table 2***Indicators and weights used by Times Higher Education (THE) World University Rankings*

S. No.	Overall Indicators	Weights of Overall Indicators in percent	Individual Indicators	Weights of Individual Indicators in percent
1.	Teaching (the environment)	30	Reputation survey	15
			Staff-to-student ratio	4.5
			Doctorate-to-bachelor's ratio	2.25
			Doctorate-awarded-to-academic-staff ratio	6
			Institutional income	2.25
2.	Research (Volume, income and reputation)	30	Reputation survey	18
			Research income	6
			Research productivity	6
3.	International outlook (staff, students, research)	7.5	Proportion of International students	2.5
			Proportion of International staff	2.5
			International collaboration	2.5
4.	Industry income (knowledge transfer)	2.5	-	
5.	Citations (research influence)	30	-	
	Total	100	Total (Individual indicators) = 100	

## Results

### Performance of Saudi universities in world rankings

This study analyzed the 2019 results of QS and THE global ranking systems and described the performance of top ten Saudi universities identified by each ranking system at global level. The results are depicted in Table 3 and 4.



**Table 3***Top ten Saudi Universities in QS World University Rankings-2019*

Top Ten Saudi Universities	World University Rankings	Indicators and their scores						Overall score
		Academic reputation	Employer reputation	Faculty students	Citations per faculty	International faculty	International students	
King Fahd University of Petroleum & Minerals (KFUPM)	189	24.4	29.7	93.9	33.6	100	35.9	45.1
King Abdulaziz University (KAU)	=231	24.9	25.1	71.3	25.3	99.1	63.9	40.0
King Saud University (KSU)	256	25.1	27.6	81.5	15.2	96.2	11.8	37.6
King Khalid University (KKU)	=448	6.2	3.6	81.9	1.5	100	23.9	25.8
Umm Al-Qura University	541-550	-	-	61.8	-	99.6	18.3	-
Imam Abdulrahman Bin Faisal University (IAU)	581-590	-	-	67.4	-	99.4	-	-
Al-Imam Muhammad Ibn Saud Islamic University (ImamU)	801-1000	-	-	-	-	90.1	-	-
King Faisal University (KFU)	801-1000	-	-	-	-	100	-	-

**Table 4***Top ten Saudi Universities in THE World University Rankings-2019*

Top Ten Saudi Universities	World University Rankings	Indicators and their scores					Overall score
		Teaching	Research	Citations	Industry Income	International Outlook	
King Abdulaziz University (KAU)	201-250	27.8	16.3	99.0	77.2	92.9	49.5-53.0
Alfaisal University	301-350	19.3	23.0	78.1	53.6	98.7	44.0-46.3
King Saud University (KSU)	501-600	23.7	28.2	39.4	93.3	80.9	33.5-37.0
King Saud Bin Abdulaziz University of Health Sciences (KSAU-HS)	501-600	31.0	7.4	62.1	35.2	65.9	33.5-37.0
King Fahd University of Petroleum and Minerals (KFUPM)	601-800	28.7	15.4	36.7	65.0	83.8	26.0-33.4
Imam Abdulrahman Bin Faisal University (IAU)	1001+	19.3	7.2	7.0	34.5	72.0	9.8-18.9

Out of 1000 universities assessed by QS ranking system during the year 2019, the top 200 universities are ranked individually while the rest are ranked in groups of fifty each such as 201-250 up to 500. In search of top ten Saudi universities, a total of eight universities are observed with their respective rankings in 2019 QS world ranking results. Out of them, four are identified with individual ranking namely, King Fahd University of Petroleum & Minerals (KFUPM), King Abdul-Aziz University (KAU), King Saud University (KSU), and King Khalid University (KKU). The remaining Saudi universities are ranked in groups which included Umm Al Quara University, Imam Abdulrahman Bin Faisal University (IAU) [formerly University of Dammam (UOD)], Al-Imam Muhammad Ibn Saud Islamic University (ImamU), and King Faisal University (KFU). While reviewing their ranking indicator scores, only those universities have ranked individually possess scores on all the five ranking indicators. It is observed that KFUPM has performed well in employer reputation, faculty/student ratio, research and internationalization of faculty. With respect to overall, it has scored 45.1 and observed as the top among the identified Saudi universities listed in QS world university rankings (Table 3).

On the other hand, THE world university rankings 2019 listed more than 1200 top universities based on research, knowledge transfer, teaching and international outlook. At global level, six Saudi universities were identified with rankings in each published group namely, KAU, Alfaisal University, KSU, King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS), KFUPM, and IAU. The results showed that KAU as the top among the identified Saudi universities with the overall score of 49.5-53.0. However, each identified Saudi university has been observed with a high score in specific ranking indicator i.e. KSAU-HS in teaching; KSU in research and industry income; KAU in citations; and Alfaisal University in international outlook. In contrast, few universities are identified with low score in some ranking indicators i.e. IAU in

research, citations and industry income; IAU and Alfaisal University in teaching, and KSAU-HS in international outlook (Table 4).

## **Discussion**

### **Comparison of the criteria of QS and THE university ranking systems**

When reviewing the criteria and indicators of QS and THE university ranking systems, QS used six metrics that effectively capture university performance (Table 1). It allocated greater weightage to academic reputation (40 percent), i.e., it collects the expert opinions regarding teaching and research quality existing (or prevailing) at the world's universities. Thus, it provided an opinion about a given institution in the international academic community, which could be of use to prospective students. On the other hand, it provided only 20 percent weighting (or weights) to the university's research impact, i.e., citations per faculty. It also used employer reputation to identify the institutions which create the most competent, innovative and effective graduates. Yet, it stands out from other ranking systems by measuring the teaching quality by proxy (faculty/student ratio) and the success of the university in attracting students and academics from other nations (i.e., international faculty ratio and international student ratio).

THE measured overall indicators namely teaching (the learning environment), research (volume, income, and reputation), citations (research influence), international outlook (staff, students and research), including an additional indicator named industry income (knowledge transfer) (Table 2). In THE, research and academic reputation surveys accounts for 33 percent of university's score i.e. teaching reputation (15 percent) plus research reputation (18 percent). It is observed as a key factor for faculty on job search, international students when deciding universities for their higher studies, and attracting new research collaborations and investment (Rocha, 2018). On the

other hand, QS features 50 percent of the university's score to academic and employer reputation surveys (Vernon, Balas, & Momani, 2018). In contrast to QS, THE rankings also measured all areas in depth, with various individual indicators delivering usable information to target audience. Industry income, which represents the research income an institution earns from industry scaled against the number of academic staff it employs, received 2.5 percent weightage. It is a new concept used by THE rankings to describe the ability of a university to help industry with innovations, inventions, and consultancy and attract funds in the commercial marketplace. In THE, teaching, research, and citations carried 30 percent weighting each, whereas the weighting for international outlook is 7.5 percent, which is slightly less than in QS (i.e. international faculty ratio and international student ratio weighs 5 percent of each). But, THE measures an additional individual indicator under international outlook viz. international collaboration, which calculates the proportion of a university's total research journal publications that have at least one international co-author and rewards higher volumes.

### **Comparison of top ten Saudi universities performance in QS and THE university ranking systems**

This descriptive study addresses the performance of top ten Saudi universities in both QS and THE world university ranking systems based on the ranking results published in the year 2019. The entire data was taken from their official ranking website and the fact sheets released by both ranking groups and all the findings are restricted to the year 2019.

With respect to worldwide ranking results, KFUPM held the first rank among the top ten Saudi universities in QS rankings and also achieved a position within the top 200 ranks at the world level. It also gained high overall score and performed well with regard to QS ranking indicators.

In contrast, few universities did not possess any score in some ranking indicators, which indicates the areas to be focused for enhancing their performance i.e. academic reputation, citations, faculty/student ratio, and international students (Table 3). On the other hand, KAU held the first rank among the six Saudi universities observed in THE. Though the universities possess scores in all THE ranking indicators, there is a need to improve their performance in areas such as teaching, research and citations. As such, universities such as KSAU-HS, KFUPM, and IAU should concentrate on their industry income. In addition to that, KFUPM, and IAU needs to focus on international outlook (Table 4). The reasons for the superior performance of some Saudi universities over other in both ranking tables could not be explained as this study is descriptive in nature and further study is needed to explore this issue.

Based on the above standings, the key areas of focus are identified as reputation, teaching quality, research, citations, and internationalization to develop excellence in learning and teaching provisions and in research as evidenced by citations and in the impact of research on the wider community. Besides, Vernon et al. (2018) concluded that there is a prerequisite for a trustworthy quality improvement in research that advances new measures and is beneficial for universities to assess and improve performance and social value. It is essential to emphasize quality over quantity to sustain the research performance. Moreover, it is recommended that Saudi universities should set targets in achieving leading positions in both QS and THE world university rankings and frame appropriate strategies to meet these criteria and indicators.

## **Strategies for improving Saudi universities performance in QS and THE rankings**

### **Improving academic reputation.**

- Faculty members employed at Saudi universities should share all the innovative approaches adopted at their university to other academics across globe using academic and research portal such as Academia, Researchgate, Publons, LinkedIn and Youtube. This will help to improve the brand image of university and academic reputation.
- Allocate a separate webpage in the university website for institutional repository in which faculty and students' research outputs as well as good practices in teaching, learning and research are made available in open access mode. This provides the international academic community with vital information and it helps to showcase research & academic output of Saudi universities to the world academic community. In addition, faculty members are encouraged to disseminate their academically innovative work to outside academic community using SlideShare website (i.e. <https://www.slideshare.net/>).
- Provide sufficient funds to faculty members to present scientific papers in both regional and international conferences that will help to enhance academic reputation.
- Support students with funding opportunities and career guidance services to pursue higher studies in world renowned universities that will help to fulfil one of the ranking criteria i.e. percentage of students pursuing higher studies. To facilitate that, provide essential transformational skills training to students to get admission both inside and outside the KSA i.e. Language skills.

- Create a separate web page in each university website in which all the academic programs are encouraged to share good practices adopted in teaching, learning, research and other community related activities.

#### **Improving employer reputation.**

- Establish alumni & career development centre at the university level to develop and strengthen the employers' database of university graduates and alumni so that it would facilitate smooth and uninterrupted communication process with the employers.
- Organize industry-academia conferences or meetings annually to ascertain the employability skills of university graduates.
- Conduct regular and periodic employer surveys and use their feedback to amend necessary modifications in the curriculum so as to fulfill the skill-sets required by the industry.

#### **Improving the quality of teaching.**

- Focus on faculty-student ratio and maintain the good faculty strength in accord with increasing student size.
- Increase the proportion of PhDs among faculty members and utilize the regional and international collaboration in teaching.
- Establish appropriate teaching load for academics and provide sufficient time to get engaged in both research and other community related activities.
- Enhance learning environment with adequate facilities and learning resources.



- Have a good academic supervision and maintain a high quality over offered programs and courses.
- Establish a benchmark for available facilities, information technology, faculty strength and learning resources to make a progression in teaching and learning environment.

### **Improving Research/Citations.**

The following strategies will aid the universities to improve their research productivity, income & reputation and also increase the citations per faculty.

- Build research capacity among faculty and create an environment for the development of research activity.
- Support research training and supervision by creating in-campus research support center and building national, regional and international partnerships.
- Strengthen and expand the research work of international quality.
- Create awareness and update faculty members with both SCOPUS and Web of Science indexed journal list to give them more scope for research publications.
- Encourage faculty members with job advancement and rewards in research within university system. To facilitate that, define rewards criteria and provide incentives for those faculty who are publishing in highly indexed journals on a yearly basis.
- Create awareness among faculty members to use appropriate university affiliation in all their scientific research publications. Also, train and educate faculty members to create account in SCOPUS database using their appropriate university affiliation.

- Encourage faculty members to do more funded and non-funded research projects and involve in collaborative research work to enhance their citation index.
- Update the list of publications by faculty members in university website annually.
- Secure benchmarking agreement with a comparable national and international partner institution and this will help to adopt good practices from those universities to enhance both academic and research reputation of Saudi universities.

#### **Improving Internationalization.**

- Provide essential transformational skills training to students to secure admission from the national, regional, and international universities.
- Create a multicultural working environment by attracting the best faculty from across the world. This would aid university to possess a highly global outlook.
- Encourage international collaboration among faculty members in scientific research publication. Such collaboration can be attracted or initiated by sharing the good practices and research outputs to global academic community. Also, faculty members are encouraged to enroll in various academic and research portals that would provide useful contacts to proceed further with international collaboration.

#### **Improving industry income.**

- Promote an innovative culture and reward mechanism towards innovation.
- Develop a center for innovation within university premises to explore the possible ways to create innovations in various fields. This center will aid researchers to develop and validate new tools and technologies through collaborations with various

strategic partners. Moreover, it is essential to ensure sufficient infrastructure and funds for the successful execution of the research activities towards new innovations.

- Build the university's ability to support industry with their innovations, inventions and consultancy. Utilize the knowledge, skills and experience of faculty members in conducting various training programs and special academic sessions to public community. Such attempts will increase the industry as well as research income for an institution, which would eventually enhance university's position in global ranking.

### **Conclusion**

This study critically appraises the criteria adopted by various global ranking providers with in-depth focus on QS and THE global university ranking systems. Further, it describes the ranking performance of the top ten Saudi universities in QS and THE global university ranking systems published in the year 2019. The findings of this study would assist both Saudi and international students in exploring the top universities in Saudi Arabia, assessing key areas such as research, teaching, employability, web services, and internalization, and help them choose the most suitable Saudi universities for their higher educational needs. The findings would help both educational policy planners and university leaders to set benchmark for national investment in higher education. This study adds a value to the existing literature by suggesting suitable strategies to be adopted by Saudi universities to meet the required criteria and ranking indicators stipulated by both QS and THE world university ranking systems and achieve a leading position on these metrics. Further, the Ministry of Education of the KSA needs to consider such strategies to improve the ranking of all its universities in global university rankings systems.

## References

- Aguillo, I. F., Bar-Ilan, J., Levene, M., & Ortega, J. L. (2010). Comparing university rankings. *Scientometrics*, 85(1), 243-256. doi: [10.1007/s11192-010-0190-z](https://doi.org/10.1007/s11192-010-0190-z)
- Alshuwaikhath, H. M., Adenle, Y. A., & Saghir, B. (2016). Sustainability assessment of higher education institutions in Saudi Arabia. *Sustainability*, 8(8), 750. doi:[10.3390/su8080750](https://doi.org/10.3390/su8080750)
- Altbach, P. G. (2010, November 11). The State of the Rankings - Inside Higher Ed. Retrieved from <https://www.insidehighered.com/views/2010/11/11/state-rankings>.
- Belanger, C. H., & Davidson, R. (2010). Ranking Canadian Universities: A case of controversy. *Tertiary Education and Management*, 3(1), 44-51. doi: [10.1080/13583883.1997.9966906](https://doi.org/10.1080/13583883.1997.9966906)
- Bergseth, B., Petocz, P., & Dahlgren, M. A. (2014). Ranking quality in higher education: guiding or misleading? *Quality in Higher Education*, 20(3), 330-347. doi: [10.1080/13538322.2014.976419](https://doi.org/10.1080/13538322.2014.976419)
- Dill, D., & Soo, M. (2005). Academic quality, league tables, and public policy: a cross-national analysis of university ranking systems. *Higher Education Review*, 49(4), 495–533.
- Halai, N. (2013). Quality of private universities in Pakistan: An analysis of higher education commission rankings 2012. *International Journal of Educational Management*, 27(7), 775-786. doi: [10.1108/IJEM-11-2012-0130](https://doi.org/10.1108/IJEM-11-2012-0130)
- Hazelkorn, E. (2012). Striving for excellence: Rankings and emerging societies. In D. Araya and P. Marbert (Eds.), *Higher Education in the Golden Age: Universities, Interconnections and Emerging Societies* (pp. 1-26). Abingdon: Routledge.

- Hazelkorn, E. (2013). How Rankings are reshaping higher education. In V. Climent, F. Michavila, & M. Ripolles (Eds.), *Los Rankings Univeritarios, Mitos y Realidades* (pp. 1-8). Spain: Tecnos.
- Hendel, D. D., & Stolz, I. (2008). A comparative analysis of higher education ranking systems in Europe. *Tertiary Education and Management*, 14(3), 173-189.
- Institute for Higher Education Policy (IHEP), (2007, April). College and university ranking systems: Global perspectives and American challenges. Retrieved from <http://www.ihep.org/sites/default/files/uploads/docs/pubs/collegerankingsystems.pdf>.
- IREG Ranking Audit, (2016, October 29). IREG (International Ranking Expert Group) observatory on academic ranking and excellence. Retrieved from [https://en.wikipedia.org/wiki/QS\\_World\\_University\\_Rankings](https://en.wikipedia.org/wiki/QS_World_University_Rankings)
- Ordorika, I., & Lloyd, M. (2013). A decade of international university rankings: A critical perspective from Latin America. In P. T. M. Marope, P. J. Wells, & E. Hazelkorn (Eds.), *Rankings and accountability in higher education: Uses and misuses* (pp. 210-231). France, Paris: UNESCO Publishing.
- Pucciarelli, F., & Kaplan, A. M. (2016). Competition and strategy in higher education: Managing complexity and uncertainty. *Business Horizons*, 59(3), 311-320.
- QS World university rankings, (2018). Methodology - QS World university rankings 2019. Retrieved from <https://www.topuniversities.com/qs-world-university-rankings/methodology>.

QS World university rankings, (2019). QS World university rankings 2019. Retrieved from <https://www.topuniversities.com/university-rankings/world-university-rankings/2019>.

Rocha, L. (2018). What's inside the Times Higher Education World University Rankings' 'Academic Reputation Survey'? Retrieved from <https://medium.com/ussbriefs/whats-inside-the-times-higher-education-world-university-rankings-academic-reputation-survey-e16f0476f720>.

Samarasekera, I., & Amrhein, C. (2010). Top schools don't always get top marks - The Edmonton Journal. Retrieved from <https://web.archive.org/web/20101003203348/http://www.edmontonjournal.com/news/schools+always+marks/3560240/story.html>.

THE World university rankings (2018, September 7). Methodology - THE World university rankings 2019. Retrieved from <https://www.timeshighereducation.com/world-university-rankings/methodology-world-university-rankings-2019>

THE World university rankings (2019). THE World university rankings 2019. Retrieved from [https://www.timeshighereducation.com/world-university-rankings/2019/world-ranking#!/page/0/length/25/sort\\_by/rank/sort\\_order/asc/cols/stats](https://www.timeshighereducation.com/world-university-rankings/2019/world-ranking#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/stats).

Vernon, M. M., Balas, E.A., & Momani, S. (2018). Are university rankings useful to improve research? A systematic review. *PLoS ONE*, 13(3), e0193762. doi: 10.1371/journal.pone.0193762

Zirulnick, A. (2010). New world university ranking puts Harvard back on top. Retrieved from <http://www.csmonitor.com/World/2010/0916/New-world-university-ranking-puts-Harvard-back-on-top>